

REPRODUCIBLE RESEARCH R MARKDOWN + KNITR

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VISUAL ANALYTICS

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MARKDOWN

"Markdown is a text-to-HTML conversion tool for web writers. Markdown allows you to write using an easy-to-read, easy-to-write plain text format, then convert it to structurally valid XHTML (or HTML)."

John Gruber, creator of Markdown

EXAMPLE

This text will appear italicized!



This text will appear italicized!

EXAMPLE

`**This text will appear bold!**`



This text will appear bold!

EXAMPLE

This is a secondary heading

This is a tertiary heading

This is a secondary heading

This is a tertiary heading

RESOURCES

- <http://daringfireball.net/projects/markdown>

R MARKDOWN

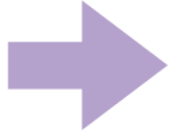
- R markdown files can be used to generate reproducible reports
 - Text and R code are integrated
 - Very easy to create in Rstudio
- no need to generate Readme files

R MARKDOWN

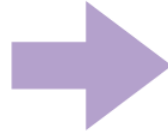
- R markdown is the integration of R code with markdown
- Allows one to create documents containing "live" R code
- R code is evaluated as part of the processing of the markdown
- Results from R code are inserted into markdown document
- A core tool in literate statistical programming

WORKFLOW

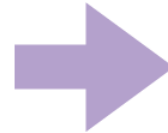
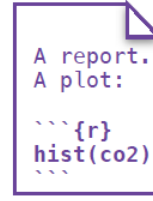
i. Open - Open a file that uses the .Rmd extension.



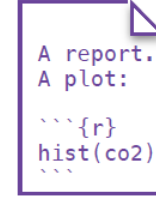
ii. Write - Write content with the easy to use R Markdown syntax



iii. Embed - Embed R code that creates output to include in the report



iv. Render - Replace R code with its output and transform the report into a slideshow, pdf, html or ms Word file.



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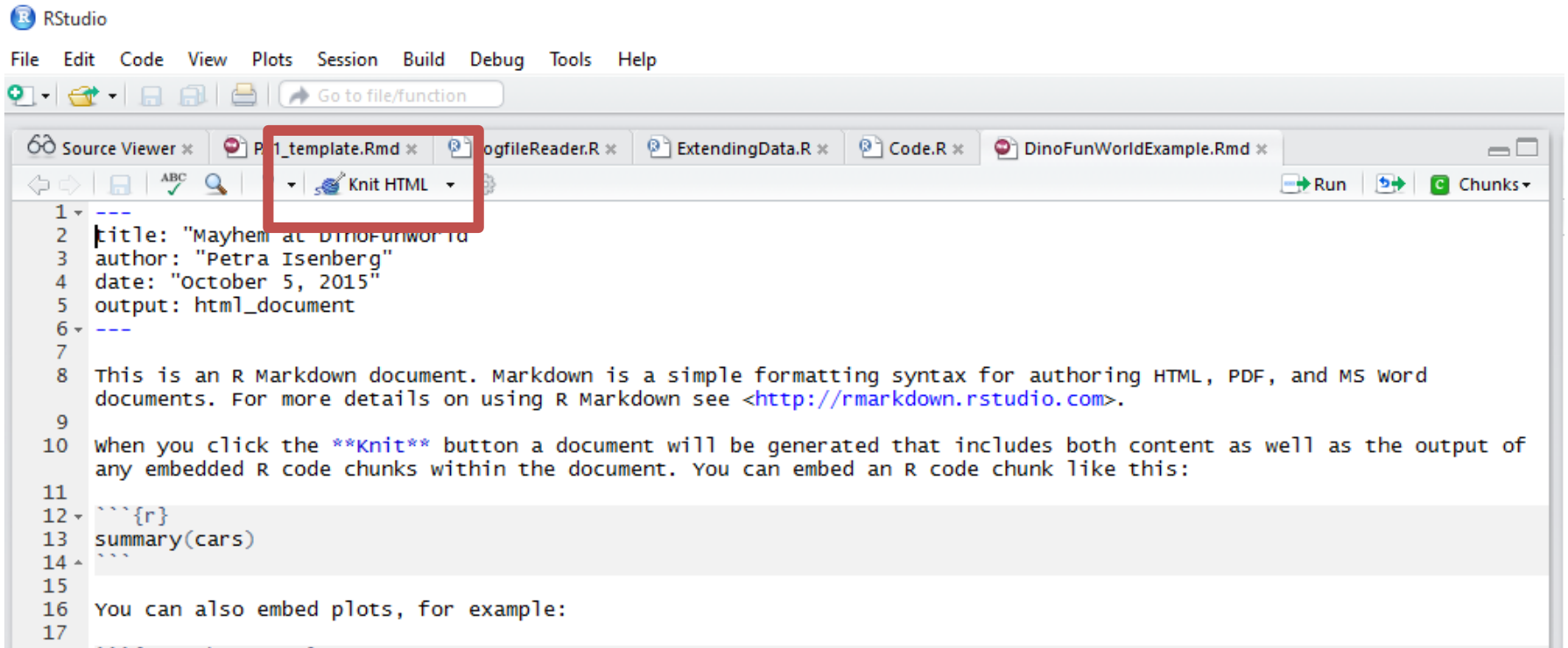
OPEN FILE

- In Rstudio
 - File -> New File -> R Markdown...
 - Give it a title, leave defaults, click OK

```
1 ---
2 title: "Mayhem at DinoFunWorld"
3 author: "Petra Isenberg"
4 date: "October 5, 2015"
5 output: html_document
6 ---
7
8 This is an R Markdown document. Markdown is a simple formatting syntax for authoring HTML, PDF, and MS word
9 documents. For more details on using R Markdown see <http://rmarkdown.rstudio.com>.
10
11 when you click the **knit** button a document will be generated that includes both content as well as the output of
12 any embedded R code chunks within the document. You can embed an R code chunk like this:
13
14 ```{r}
15 summary(cars)
16 ```
17
18 You can also embed plots, for example:
19
20 ```{r, echo=FALSE}
21 plot(cars)
22 ```
23
24 Note that the `echo = FALSE` parameter was added to the code chunk to prevent printing of the R code that generated
25 the plot.
```

NEXT

- Click on the Knit HTML Button



The screenshot shows the RStudio interface. The top menu bar includes File, Edit, Code, View, Plots, Session, Build, Debug, Tools, and Help. Below the menu bar is a toolbar with icons for file operations and a search bar labeled "Go to file/function". The main window displays several open files: Source Viewer, P1_template.Rmd, logfileReader.R, ExtendingData.R, Code.R, and DinoFunWorldExample.Rmd. The "P1_template.Rmd" file is selected, and its content is visible in the editor. A red box highlights the "Knit HTML" button in the toolbar. The code in the editor includes a YAML header, a title, author, date, and output format, followed by a paragraph of text and an R code chunk.

```
1 ---
2 title: "Mayhem at DinoFunworld"
3 author: "Petra Isenberg"
4 date: "October 5, 2015"
5 output: html_document
6 ---
7
8 This is an R Markdown document. Markdown is a simple formatting syntax for authoring HTML, PDF, and MS Word
9 documents. For more details on using R Markdown see <http://rmarkdown.rstudio.com>.
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13
14 ```{r}
15 summary(cars)
16 ```
17
18 You can also embed plots, for example:
```

```
1 ---
2 title: "Mayhem at DinoFunworld"
3 author: "Petra Isenberg"
4 date: "October 5, 2015"
5 output: html_document
6 ---
7
8 |
```

Erase the example code

```
1 ---
2 title: "Mayhem at DinoFunworld"
3 author: "Petra Isenberg"
4 date: "October 5, 2015"
5 output: html_document
6 ---
7
8 |
```

Lets do something useful for your assignment...

```
#Merging Data Files with R
```

```
##Loading Files
```

```
First we will load a file that contains attractions,  
their ids, and coordinates in the park
```

```
` `{r}
```

```
data <- read.csv("ParkCoordinates.csv")
```

```
head(data)
```

```
````
```

Next we will load our data from the data cleaning exercise

```
` `` {r}
attractions <- read.csv("AttractionsOCR-
txt.csv")
head(attractions)
` ``
```



**KNIT HMTL**

# Mayhem at DinoFunWorld

Petra Isenberg

October 5, 2015

## Merging Data Files with R

### Loading Files

First we will load a file that contains attractions, their ids, and coordinates in the park

```
data <- read.csv("ParkCoordinates.csv")
head(data)
```

```
Attraction AttractionID x y
1 Wrightiraptor Mountain 1 47 11
2 Galactosaurus Rage 2 27 15
3 Auvilotops Express 3 38 90
4 TerrorSaur 4 78 48
5 Wendisaurus Chase 5 16 66
6 Keimosaurus Big Spin 6 86 44
```

Next we will load our data from the data cleaning exercise

```
attractions <- read.csv("AttractionsOCR-txt.csv")
head(attractions)
```

```
AttractionID ParkArea Attraction CategoryNames
1 1 Coaster Alley Wrightiraptor Mountain Thrill Rides
2 2 Coaster Alley Galactosaurus Rage Thrill Rides
3 3 Tundra Land Auvilotops Express Thrill Rides
4 4 Wet Land TerrorSaur Thrill Rides
5 5 Tundra Land Wendisaurus Chase Thrill Rides
6 6 Coaster Alley Keimosaurus Big Spin Thrill Rides
```

# RESOURCE

- <https://www.rstudio.com/wp-content/uploads/2015/02/rmarkdown-cheatsheet.pdf>